

# PADLOCK

## BACKGROUND OF THE INVENTION

### 1. Field of the Invention

This invention relates to a padlock, particularly to one able to be  
5 assembled conveniently and quickly, having excellent effect of antitheft  
and greatly lowering producing cost. In using, only insert a key in the  
keyhole of a lock core and turn it around to rotate the rotary member of  
the lock core together with a stop block to let the engage groove of the  
stop block disengaged from the annular groove of a movable bolt and  
10 make a spring extended elastically. At this time, the movable bolt is no  
longer held by the engage groove of stop block so it can be drawn out of  
the movable bolt insert hole of an upper fundamental base. Then, a steel  
cable having one end secured in the upper fundamental base is wound  
around an article to be locked and the movable bolt is inserted through the  
15 movable bolt threading hole of an upper shell and positioned in the  
movable bolt insert hole of the upper fundamental base and the insert hole  
of a lower fundamental base. Simultaneously, the stop block is pulled and  
moved to its original position by the recovering resilience of the spring and  
has its engage groove engaged with the annular groove of the movable  
20 bolt to stably lock the movable bolt in a lock body, thus finishing locking of  
a padlock.

### 2. Description of the Prior Art

A conventional laminated lock 1, as shown in Fig. 1, includes a  
lock core body 10 made of a number of steel plates 100 piled up and  
25 combined together by rivets 101. The lock core body 10 has its left topside  
secured with a stationary stud 11 having an insert hole 12 and its right

topside bored with a deadlock hole 13. A steel cable 14 has one end inserted in the insert hole 12 of the stationary stud 11 and then the stationary stud 11 has its side wall compressed so as to squeeze and fix the end of the steel cable 14 therein, with the exterior of the steel cable 14 wrapped by a soft protective sleeve 15. The steel cable 14 has the other end secured with a movable deadbolt 16 having an annular engage groove 17 near the end and a spring 18 fitted thereon. In using, the deadlock 16 has its end inserted in the deadlock hole 13 of the lock core body 10, and a key is inserted in the keyhole of the lock core body 10 and turned around to rotate the lock core (not shown) together with the engage plates inside the lock core body 10 to lock the deadbolt 16, thus finishing locking of a conventional laminated lock. On the contrary, to unlock the laminated lock 1, just turn the key reversely to actuate the engage plates inside the lock core body 10 to release the deadbolt 16.

However, the lock core body 10 of a conventional laminated lock 1 is made by piling together a number of steel plates 100 with different shaped insert and through holes, and then these steel plates 100 are riveted together, taking too much time and labor in assembly. Especially, if any one of the steel plates 100 is arranged mistakenly during assembling, the steel plates 100 have to be disassembled one by one and rearranged, resulting in much delay in assembly and increasing its producing cost.

## SUMMARY OF THE INVENTION

The objective of the invention is to offer a padlock, convenient to be assembled, able to lower producing cost and having excellent effect of antitheft.

The feature of the invention is an upper fundamental base having a recessed chamber formed in the interior and a cut surface defining one

side of the recessed chamber and having a movable-bolt insert hole, the upper fundamental base further bored with a stationary-bolt insert hole. A lower fundamental base to be combined with the upper fundamental base is provided with a cut surface with an insert hole on the inner side and has  
5 a lock core accommodating chamber in the center and a through hole communicating with the lock core accommodating chamber. A lock core received in the lock core-accommodating chamber of the lower fundamental base has one end provided with a rotary member and the other end bored with a keyhole. A stop block to be received in the  
10 recessed chamber of the upper fundamental base is provided with an insert hole in the center and an engage groove at the right end, with the lower end of a spring hooked with the right end of the stop block and the upper end of the spring hooked with the upper fundamental base. A stationary bolt to be inserted in the stationary-bolt insert hole of the upper  
15 fundamental base is formed with an annular groove and an axial insert hole. A movable bolt is to be inserted in the movable-bolt insert hole of the upper fundamental base and the insert hole of the lower fundamental base, having an annular groove and an axial insert hole. An upper shell to be covered on the exterior of the upper fundamental base is provided with  
20 a stationary-bolt threading hole and a movable-bolt threading hole. A lower shell to be covered on the interior of the lower fundamental base and combined with the upper shell is bored with a through hole in the center.

### BRIEF DESCRIPTION OF DRAWINGS

25 This invention will be better understood by referring to the accompanying drawings, wherein:

Fig. 1 is a perspective view of a conventional laminated lock;

Fig. 2 is an exploded perspective view of a padlock in the present invention;

Fig. 3 is a perspective view of the padlock in the present invention:

Fig. 4 is a cross-sectional view of the padlock in a locked condition  
5 in the present invention; and,

Fig. 5 is a cross-sectional view of the padlock in an unlocked condition in the present invention.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A preferred embodiment of a padlock in the present invention, as  
10 shown in Figs. 2 and 3, includes an upper fundamental base 2, a lower fundamental base 3, a lock core 4, a stop block 5, a stationary bolt 6, a movable bolt 7, an upper shell 8 and a lower shell 9 combined together.

The upper fundamental base 2 is formed with a recessed chamber 20 in the interior and a cut surface 21 defining one side of the recessed  
15 chamber 20 and provided with a movable-bolt inserting hole 22 and a horizontal projecting stud 23. Further, the upper fundamental base 2 is provided with a stationary-bolt inserting hole 24 in a left portion, a pinhole 25 in the left sidewall for a fixing pin 26 to be inserted therein and two positioning studs 27 on the front side.

20 The lower fundamental base 3 to be combined with the upper fundamental base 2 has a cut surface 30 formed on its inner side and bored with a lengthwise insert hole 31 and also having a lengthwise lock core accommodating chamber 32 in the center. Further, the lower fundamental base 3 is bored with a through hole 33 communicating with  
25 the lock core accommodating chamber 32 and two stud holes 34 in the inner side.

The lock core 4 to be received in the lock core-accommodating

chamber 32 of the lower fundamental base 3 has one end provided with a rotary member 40 and the other end formed with a keyhole 41.

The stop block 5 to be received in the recessed chamber 20 of the upper fundamental base 2 has its central part bored with an insert hole 50 and its right end provided with a horizontal projecting stud 51 and an engage groove 52, with one end of a spring 53 hooked with the projecting stud 51.

The stationary bolt 6 to be inserted and fixed in the stationary-bolt inserting hole 24 of the upper fundamental base 2 is formed with an annular groove 60 and an axial insert hole 61.

The movable bolt 7 is to be inserted in the movable-bolt inserting hole 22 of the upper fundamental base 2 and the insert hole 31 of the lower fundamental base 3, having an annular groove 70 and an axial insert hole 71.

The upper shell 8 to be covered on the exterior of the upper fundamental base 2 is bored with a stationary-bolt insert hole 80 and a movable-bolt insert hole 81.

The lower shell 9 to be covered on the exterior of the lower fundamental base 3 and combined with the upper shell 8 is bored with a through hole 90 in the center.

In assembling, as shown in Figs. 2, 3 and 4, firstly, insert one end of a steel cable 19 in the axial insert hole 61 of the stationary bolt 6 and compress the inner wall of the annular groove 60 of the stationary bolt 6 to squeeze and fix the end of the steel cable 19 therein and then insert the other end of the steel cable 19 in the axial insert hole 71 of the movable bolt 7 and compress the inner wall of the annular groove 70 of the movable bolt 7 to squeeze and fix the end of the steel cable 19 therein. Then, the stationary bolt 6 is inserted through the stationary-bolt threading

hole 80 of the upper shell 8 and positioned in the stationary-bolt insert hole 24 of the upper fundamental base 2 and fixed therein by a fixing pin 26 inserted through the pin hole 25 of the upper fundamental base 2 and engaged in the annular groove 60 of the stationary bolt 6.

5           Next, the stop block 5 is received in the recessed chamber 20 and has its right end positioned on the cut surface 21 of the upper fundamental base 2, and the spring 53 has its lower end fitted on the projecting stud 51 of the stop block 5 and its upper end fitted on the projecting stud 23 of the upper fundamental base 2, letting the engage  
10   groove 52 of the stop block 5 aligned to the movable-bolt insert hole 22 of the upper fundamental base 2. Subsequently, the lock core 4 is fitted in the lock core accommodating chamber 32 of the lower fundamental base 3, and the upper fundamental base 2 and the lower fundamental base 3 are combined together, letting the positioning studs 27 of the upper  
15   fundamental base 2 inserted in the stud holes 34 of the lower fundamental base 3. Afterward, the rotary member 40 of the lock core 4 is inserted in the insert hole 50 of the stop block 5, and the upper shell 8 is covered on the exterior of the upper fundamental base 2 and the lower shell 9 is covered on the exterior of the lower fundamental base 3.

20           Lastly, the upper shell 8 and the lower shell 9 are combined and welded together and their exterior is enveloped with a wrapping material to complete a padlock body. Then, the movable bolt 7 is inserted through the movable-bolt threading hole 81 of the upper shell 8 and positioned in the movable-bolt insert hole 22 of the upper fundamental base 2 and the  
25   insert hole 31 of the lower fundamental base 3 to finish assembly of the padlock.

          In using, as shown in Figs. 4 and 5, a key is inserted in the keyhole 41 of the lock core 4 and turned around to rotate the rotary member 40 of

the lock core 4 together with the stop block 5 to disengage the engage groove 52 of the stop block 5 from the annular groove 70 of the movable bolt 7 and make the spring 53 extended elastically, letting the movable bolt 7 no longer held by the engage groove 52 of the stop block 5, and at this time the movable bolt 7 can be drawn out of the movable-bolt insert hole 22 of the upper fundamental base 2. Then, the steel cable 19 is wound around an article to be locked and the movable bolt 7 is inserted through the movable-bolt threading hole 81 of the upper shell 8 and positioned in the movable-bolt insert hole 22 of the upper fundamental base 2 and the insert hole 31 of the lower fundamental base 3.

When the movable bolt 7 passes through the movable-bolt insert hole 22 of the upper fundamental base 2 to be inserted in the insert hole 31 of the lower fundamental base 3, its end will push the stop block 5 downward to let the end of the stop block 5 turned and disengaged from the movable-bolt insert hole 22 of the upper fundamental base 2 and the spring will be elastically pulled and extended. After the movable bolt 7 has its end inserted and positioned in the insert hole 31 of the lower fundamental base 3, the annular groove 70 of the movable bolt 7 is positioned in the engage groove 52 of the stop block 5 and the end of the stop block 5 is no longer pushed by the end of the movable bolt 7. Therefore, the stop block 5 is pulled and moved to its original position by the recovering resilience of the spring 53 and its engage groove 52 is fixedly engaged with the annular groove 70 of the movable bolt 7, letting the movable bolt 7 locked stably in the lock body to finish locking of the padlock.

To unlock the padlock, as shown in Fig. 5, only insert a key in the keyhole 41 of the lock core 4 and turn it around to rotate the rotary member 40 of the lock core 4 together with the stop block 5 to disengage

the engage groove 52 of the stop block 5 from the annular groove 70 of the movable bolt 7 and make the spring 53 extended elastically. Thus, the movable bolt 7 is no longer held by the engage groove 52 of the stop block 5 so it can be drawn out of the movable-bolt insert hole 22 of the upper fundamental base 2 to finish unlocking of the padlock.

As can be noted from the above description, this invention has the following advantages.

1. It is convenient in operating and using.
2. It can be assembled conveniently and quickly, able to lower its producing cost.
3. The movable bolt in this invention can be locked stably, having excellent effect of antitheft.

While the preferred embodiment of the invention has been described above, it will be recognized and understood that various modifications may be made therein the appended claims are intended to cover all such modifications that may fall within the spirit and scope of the invention.

20

25